REMARKS

Independent Claims 1 and 7 have been amended to more concisely define Applicants' invention. Reconsideration of this application in light of the foregoing amendments and following remarks is respectfully requested.

The objection to Claims 5, 6, 11 and 12, as set forth at the top of page 2 of the outstanding Office Action, is respectfully traversed. Applicants are aware of no provision in the Patent Laws nor any Rules promulgated by the Commissioner of Patents which give rise to the objection raised. The acronym DSX is a well known term of art associated with digital signal cross-connect.

The digital code pattern $DBDB_{HEX}$ is simply that; it is not an acronym. The letter D_{HEX} translates into the binary code 1101, while the letter B_{HEX} translates into the binary code 1011, as those skilled in the technology are aware.

The terms employed by Applicants in the present application are clear and concise and identify aspects of the invention for which patent protection is sought. Withdrawal of the objection is respectfully requested.

The rejection of Claims 1-12, under the provisions of 35 U.S.C. § 102, as being anticipated by the patent to Serikawa et al 6,028,845, is respectfully traversed.

Before discussing the shortcomings of the cited patent, the present invention will be briefly reviewed, in order that differences between the cited prior art and Applicants' claims, particularly as characterized in the amendments to Claims 1 and 7, may be more readily appreciated.

As is discussed in the initial portion of the present specification, prior to the present invention, equipment used for initiating loop-query diagnostic operations in remote equipment employed a prescribed digital sequence, in particular the sequence $DBDB_{HEX}$ to perform performance monitoring (i.e. pass-fail) loopback. The interrogated piece of equipment deliberated modified the received pattern being looped back by the injection of errors at a prescribed rate or injection interval, in order to indicate whether or not a measured performance was satisfactory. If the loop was operating satisfactorily (i.e. it passed the test), a first number of injected errors representative of a "pass" would be inserted into the looped back code. On the other hand, if the loop was not performing satisfactorily (i.e. a "failure"), a second number of injected errors would be injected into the looped back code. See the description on page 2, paragraphs 3-5 of the present specification, for example.

The present invention improves upon this pass/fail scheme, by providing what is effectively a gray scale indication of the 'wellness' of the loop, by providing at least three different numbers of errors associated with respectively different ranges of link performance parameters, and then injecting the appropriate number of errors into the code being looped back. Namely, the prescribed digital code (e.g., $DBDB_{HEX}$) as transmitted from the query site and received at the remote measurement site, is deliberately modified by the injection of a prescribed number of errors into the code.

In order to underscore this feature of the invention, each of Claims 1 and 7 has been amended to recite that at the remote cite or measurement site, the digital code sequence as received thereby is deliberately modified by introducing a selected one of

at least three different number of errors or a selected number of errors into the prescribed digital code sequence that has been transmitted from the query/test site to the remote/measurement site.

In contrast therewith, the US patent to Serikawa et al 6,028,845 discloses a conventional loopback measurement mechanism which transmits a pseudorandom code from the test site, causes it to be looped back and then compares what is received back at the test site with what was transmitted. The terminal equipment does not deliberately modify the pseudorandom code as transmitted by the pattern generator 71 over the downlink line. Instead, it simply loops it back by way of the uplink line, so that it may be compared in the comparing means 73 at the headend equipment 11.

Moreover, nowhere disclosed or suggested in the patent to Serikawa et al is the selection of at least one of three different numbers of errors associated with respectively different ranges of link performance parameters as specified in Claims 1 and 7.

With respect to Claims 2 and 8, contrary to what is asserted in the Office Action, the patent to Serikawa et al contains no disclosure or suggestion of causing the remote site to select that one of the at least three different numbers of errors, based upon in which a plurality of different ranges of link performance parameters, the link performance measurements parameter values are located. What is attributed to claims 2 and 8 in the Office Action is not what is actually recited in Claims 2 and 8.

It is to be observed that a basic shortcoming of the patent to Serikawa et al is the fact that its terminal equipment 12 does nothing more than perform a loopback. It does not conduct link

performance measurements nor is there any deliberate modification of what is being looped back in accordance with such non-existent measurements.

Claims 3 and 9 specify that the respectively different ranges of link performance parameters include multiple sets of performance thresholds respectively associated with plural link parameters. Again, the performance measurements are carried out in applicants' invention at the remote site, not at the headend. The comparing means 73 in the headend equipment 11 of Serikawa et al does nothing more than compare what was sent down the link to what is received. There are no multiple measurements and, in any event, such measurements are not carried out by the terminal equipment 12. It is respectfully submitted that the proposal to correlate Claims 3 and 9 with what is disclosed by Serikawa et al is inaccurate.

Claims 4 and 10 specify that the plural link parameters include signal margin and false attenuation. Applicants have reviewed the statement in Column 7, Lines 7-13 of the patent to Serikawa et al. Nowhere in this paragraph is there any mention of measuring multiple or plural link parameters that include signal margin and false attenuation.

As to Claims 5 and 11, there is no indication that the pattern generator 71 produces the digital code $DBDB_{HEX}$. Rather, the patent states that what is generated is a pseudorandom code, which is not the same code or the one specified in Applicants' claims.

The statement regarding Claims 6 and 12 at the top of page 5 of the Office Action is completely unsupported. Applicants' review of the patent finds no mention of introducing a selected

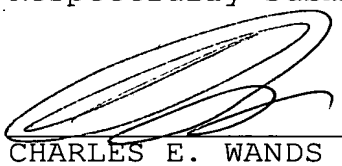
number of errors into the prescribed digital code sequence as a DSX digital signal stream.

In the absence of a citation of prior art which teaches or suggests Applicants' invention, particularly as characterized by the foregoing amendments, favorable reconsideration of this application and an Notice of Allowability of claims 1-12 are respectfully requested.

Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 01-0484 and please credit any excess fees to such deposit account.

Respectfully submitted,



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